Data Sheet
FUJITSU Server PRIMERGY BX Ethernet Switch/IBP 10Gbit/s 18/8

High Performance LAN and SAN End-to-End

FUJITSU Server PRIMERGY systems provide the most powerful and flexible data center solutions for companies of all sizes, across all industries and for any type of workload. This includes expandable PRIMERGY tower servers for remote and branch offices, versatile rack-mount servers, compact and scalable blade systems, as well as density-optimized scale-out servers. They convince by business proven quality with a wide range of innovations, highest efficiency cutting operational cost and complexity, and provide more agility in daily operations in order to turn IT faster into a business advantage.

FUJITSU Server PRIMERGY BX blade systems are the perfect platform to build a converged infrastructure designed to reduce IT costs, time and efforts. PRIMERGY Blade Servers utilizes a modular architecture and contain in addition to the compute power, all required infrastructure and network components, storage capacity as well as management modules that helps companies to simplify their infrastructure, achieve significant cost reductions and increase flexibility.

PRIMERGY BX Ethernet Switch/IBP 10Gbit/s 18/8

The PRIMERGY Ethernet Switch/IBP 18/8 is an integrated 10 Gbit/s Ethernet connection blade with DCB mode for use in the PRIMERGY BX400 and BX900 blade server chassis. Collaboration with Top of Rack (ToR) switches enables for operation of converging FCoE, extending usage areas comprehensively.
It can be installed in 4 connection bays of PRIMERGY BX400 (Fabrics 1 and 2), and in 6 connection bays of PRIMERGY BX900 (Fabrics 1, 2 and 3) and offers 18 x 1/10 Gbit/s Ethernet down-link port to the midplane for server blade connections. The module comes with 8 x 1/10 Gbit/s Ethernet uplink port and supports OSI Layer 2 functions.
The Intelligent Blade Panel function combines the switch advantage of cable and port consolidation with the pass-thru advantages of working fully (VLAN) transparent and lacking of any protocol compatibility issues. Server blade LAN ports may be grouped together with one or more external ports into independent named port groups. When using the so-called Management VLAN grouping feature, a separate VLAN-based management access to each server blade may be assigned. Highly appreciated will be the fact, that this connection blade allows simultaneous access from 1 as well as from 10 Gbit/s Ethernet ports, thus providing non-constraining operability of differently equipped server blades in a chassis with the identical connection blade.

Features & Benefits

Main Features	Benefits
Variable operation	
■ 10 Gbit/s Ethernet connection blade operable as standard Layer 2 switch, as End Host Mode (EHM) enabled switch, or as Intelligent Blade Panel (IBP)	■ Effortless selection of pure switch, EHM, or IBP functionality allows flexible use responding to demand
Flexible connectivity	
■ Installation up to 4 (6) times in connection bays 1 to 4 (1 to 6) of BX400 (BX900), at the rear side of the blade server chassis	■ Perfect transmission of data from Mezzanine cards to various external networks
Performance is key	
■ - 8 x 1/10 Gbit/s SFP/SFP+ uplink port ■ - low latency of 300ns	■ Variable connection to external networks with extremely high bandwidth. ■ Operational with today's wide spread 1 Gbit/s Ethernet backbones and also with the growing number of 10 Gbit/s ones
Carefree operation	
■ Features supported: ■ IBP mode: Uplink Sets, Port Grouping, Standard Port Group, VLAN Port Group, Service LAN Group, Service VLAN Group, VLAN transparency ■ EHM and IBP make Spanning Tree Protocol (STP) needless	■ IBP mode as well as EHM avoid protocol compatibility issues (e.g. Cisco compatibility) and offer a large number of add-on functions compared to standard switch mode
Compatible innovation	
■ Enabled for mixed operation of server blades with 1 and 10 Gbit/s Ethernet controllers on board and on mezzanine cards	■ Investment protection for existing server blades by flexible adaptation of downlink speed
Future proof	
■ In addition to pure Ethernet protocol, this connection blade supports FibreChannel over Ethernet (FCoE), assured by its Data Center Bridging (DCB) mode that cares for a lossless transmission of Ethernet frames, indispensable for FC protocols	■ Investing in this connection blade guarantees long-term operability; it is usable also by customers, who tend to move away from separated Ethernet and FibreChannel towards a converging topology

Technical details

PRIMERGY BX Ethernet Switch/IBP 10Gbit/s 18/8	
Connection type	Ethernet Connection Blade Layer 2+, 10 Gb Ethernet Switch, Intelligent Blade Panel (IBP) or End Host Mode (EHM)
Supported system units	PRIMERGY BX400 S1, PRIMERGY BX900 S1, PRIMERGY BX900 S2
Max. number per BX unit	4 in PRIMERGY BX400 S1, 6 in PRIMERGY BX900 S1/S2
Supported Server Blades	all PRIMERGY BX9xx and BX25xx Server Blades
Supported Server Blade I/O Solutions	PRIMERGY BX9xx Server Blade w. 1 Gbit/s LAN on board PRIMERGY BX9xx Server Blade w. 10 Gbit/s LAN on board PRIMERGY BX9xx S3 Server Blades w. 10 Gbit/s CNA on Board PRIMERGY BX9xx S4 Server Blades w. 10 Gbit/s CNA on Board PRIMERGY BX25xx M1 Server Blades w. 10Gbit/s CNA on Board PRIMERGY BX Eth Mezz Card 1 Gbit/s 4 port PRIMERGY BX Eth Mezz Card 10 Gbit/s 2 port PRIMERGY BX CNA Mezz Card 10 Gbit/s 2 port (MC-CNA102E) PRIMERGY BX CNA Mezz Card 10 Gbit/s 2 port (MC-CNA112E)
Connection Blade notes	Top of Rack switch out of the Cisco Nexus 5000 family required, when operated in DCB mode supporting FCoE protocol

Interfaces	
Down-link ports	18 x 1/10 Gbit/s Eth
Up-link ports	8 x 1/10 Gbit/s Eth (SFP/SFP+)
Management ports	internal 10/100Mbit/s Ethernet to each MMB internal serial port (RS232) to MMB

Supported Interface Modules / Cables Order code	Application	Type / mode	Connector / cable Length
S26361-F3986-E1	Ethernet 1 Gbit/s	SFP / 1000BASE-T	RJ45 / up to 100m
S26361-F3986-E2	Ethernet 1 Gbit/s	SFP / MMF (SWL)	LC-style / up to 300m
S26361-F3986-E3	Ethernet 10 Gbit/s	SFP+ / MMF (SWL)	LC-style / up to 300m
S26361-F3986-E4	Ethernet 10 Gbit/s	SFP+ / SMF (LWL)	LC-style / up to 10km
S26361-F3989-L102	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 2m
S26361-F3989-L105	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 5m
S26361-F3989-L110	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 10m
S26361-F4571-L101	Ethernet 10 Gbit/s	SFP+ Twinax Cable / passive	SFP+ / 1m
S26361-F4571-L107	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 7m
S26361-F4571-L110	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 10m
S26361-F3873-E500	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 3m or 5m
S26361-F3873-L501	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 1m
S26361-F3873-L503	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 3m
S26361-F3873-L505	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 5m
Interface Module notes	Only Fujitsu certified modules and cables are supported Order codes starting with "S26361-F3873" are Brocade branded cables, required for connections to Brocade switches Order codes starting with "S26361-F4571" are Cisco branded cables, required for connections to Cisco switches The Cisco passive twinax cables 3m and 7m areare not supported!		

Technical specifications

Layer 2 feature	Flow control: IEEE802.3x for full duplex mode Jumbo frames up to 9216 Byte Link Aggregation VLAN IGMP snooping v1/v2/v3 (400 groups) Broadcast and Multicast Storm protection Link State / Port Down Relay (Force downlink port down, if uplink port is down) Port Backup LLDP Forward Wakeup On LAN (WOL) packets to the unauthenticated ports Port Mirror (not for IBP) Spanning Tree (not for IBP mode)
Quality of service	IEEE 802.1p based CoS (Class of Service) IP TOS/Precedence/DSCP based CoS Differentiated Service (DiffServ)
Link aggregation	Support of: - up to 10 channel groups for uplink and downlink ports - up to 10 members per channel group - IEEE 802.3ad Link Aggregation (LACP and static mode) - Load balance for both unicast and multicast traffics - Intelligent load balancing for channel groups; MAC based and IP based
Spanning tree	**for Switch mode** IEEE 802.1D (STP) IEEE 802.1W (RSTP) IEEE 802.1S (MSTP) BPDU filtering support **for End Host Mode and IBP mode** not needed
DCB features	IEEE 802.1Qbb: Priority-based Flow Control (PFC) IEEE 802.1Qaz: Enhanced Transmission Selection (ETS) up to 3 Priority Groups (PG) are supported Fibre Channel over Ethernet (FCoE) * FCoE frames as defined by T11 Committee
IBP features	max. uplink sets 18 max. port groups 18 with user defined names max. VLAN groups 18 max. service LANs 17 max. service VLANs 1000 Port groups may (but need not) contain an uplink set (external ports) VLAN-based independent service / management access to server blades May use either a dedicated separate uplink set or share an uplink set
Network protocol and standards compatibility	IEEE 802.3ae 10Gbit Ethernet IEEE 802.3x Flow Control IEEE 802.3ad LACP IEEE 802.1v Protocol VLAN, Port VLAN IEEE 802.1q VLAN IEEE 802.1p Class of Service IEEE 802.1ab LLDP IEEE 802.1x Port Based Network Access Control IEEE 802.3ac Frame extension for VLAN Tagging IEEE 802.1Qbb Priority Flow Control (PFC) IEEE 802.1Qau Congestion Notification IEEE 802.1Qaz Enhanced Transmission Selection (ETS)

Technical specifications

Network protocol and standards compatibility for IBP	IEEE 802.3ae 10Gbit Ethernet IEEE 802.3ad LACP IEEE 802.3x Flow Control IEEE 802.1ab LLDP IEEE 802.1p Class of Service IEEE 802.1Qbb Priority Flow Control (PFC) IEEE 802.1Qau Congestion Notification IEEE 802.1Qaz Enhanced Transmission Selection (ETS)
Performance	Non blocking wire speed of L2 switching performance; 300Mpps (packets per sec) in total Low latency less than 450ns (First bit-in to First bit-out) Cut-through and Store-and-Forward forwarding selectable System memory with 128MB SDRAM Flash memory with 32MB 16K MAC address entries
VLAN	**VLAN features in Switch- and End Host Mode:** IEEE 802.1Q VLAN Up to 1000 VLANs, out of 4K VLAN IDs Port-based VLAN Protocol-based VLAN Support for both tagged and untagged ports Independent VLAN learning Double VLAN tagging (Q-in-Q tagging) **VLAN features in IBP Mode:** IEEE 802.1Q VLAN
Management	1 console interface for MMB internal management Firmware upload/download via (T)FTP Configuration data upload/download via (T)FTP Dual firmware images 3x Configuration data (incl. factory default) are available SSH/SSL/TLS keys download via (T)FTP Message/event/error logs IPv6 for management IP address DHCP/DHCPv6 Client support Ping function SNTP (Simple Network Time Protocol) v1 to v4 LLDP (Link Layer Discovery Protocol); IEEE 802.1ab SSH v2 switch management SSL v3/TLS v1 (RFC2246) switch management CLI (Command Line Interface) switch management Support Web switch management SNMP v1/v2/v3 switch management Private Enterprise MIB RMON groups 1, 2, 3 and 9
Security	User/Password Protection L2/L3/L4 Access Control List (ACL) Port-based Network Access Control; IEEE 802.1x RADIUS TACACS+ SSL v3/TLS v1 (RFC2246) SSH v2 Web Authentication MAC address Authentication Configurable User Interface Timeout Period Support for Auto-logout Denial of Service (DoS) Enhancements
User interface	Command Line Interface (CLI) via console, SSH or telnet remote login Web-based management via web browser SNMP v1/v2c/v3.

Dimensions / Weight

Dimensions (W x D x H)	192.6 x 267.9 x 27.9 mm

Dimensions / Weight	
Weight	1.5 K g
Environmental compliance	
Temperature note	see corresponding PRIMERGY BX System Unit
Maximum altitude	see corresponding PRIMERGY BX System Unit
Operating environment	FTS 04230 – Guideline for Data Center (installation specification)
Operating environment link	http://docs.ts.fujitsu.com/dl.aspx?id=e4813edf-4a27-461a-8184-983092c12dbe
Electrical values	
Active power (max. configuration)	40 W
Heat emission	144.0 kJ/h (136.5 BTU/h)
Compliance	
Germany	GS
Europe	CE Class A *
USA/Canada	ULc/us FCC Class A
Global	CB RoHS WEEE
Japan	VCCI:V3 Class A + JIS 61000-3-2
Australia/New Zealand	C-Tick
Taiwan	BSMI
Compliance notes	In combination with corresponding PRIMERGY BX system unit
Compliance link	http://globalsp.ts.fujitsu.com/sites/certificates

More information

Fujitsu OPTIMIZATION Services

In addition to Fujitsu PRIMERGY BX Ethernet Switch/IBP 10Gbit/s 18/8, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Fujitsu Portfolio
Build on industry standards, Fujitsu offers a full portfolio of IT hardware and software products, services, solutions and cloud offering, ranging from clients to datacenter solutions and includes the broad stack of Business Solutions, as well as the full stack of Cloud offering. This allows customers to leverage from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

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More information

Learn more about Fujitsu PRIMERGY BX Ethernet Switch/IBP 10Gbit/s 18/8, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
www.fujitsu.com/fts

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment.
Using our global know-how, we aim to contribute to the creation of a sustainable environment for future generations through IT.
Please find further information at http://www.fujitsu.com/global/about/environment

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